

Examiner Interview before any further actions on the merits.

The applicant will now address each of the issues raised in the outstanding Office Action.

Objections

Claims 3, 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form. Since claim 3 has been rewritten in independent form to include the elements of cancelled claims 1 and 2, and since claims 4 and 7 depend from claim 3, this ground of objection should be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 1, 2 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,882,524 ("the Lee patent") in view of U.S. Patent No. 3,610,978 ("the Hermann patent"). The applicant respectfully requests that the Examiner reconsider and withdraw this ground of rejection in view of the following. Since these claims have been cancelled, this ground of rejection is rendered moot.

Entry of Amendments under 37 C.F.R. § 1.116

Since the claim amendments raise no new issues and place the application into condition for allowance, they should be entered.

Conclusion

In view of the foregoing amendments and remarks, the applicant respectfully submits that the pending claims are in condition for allowance. Accordingly, the applicant requests that the Examiner pass this application to issue.

Respectfully submitted,

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CERTIFICATE OF MAILING under 37 C.F.R. 1.8(a)

I hereby certify that this correspondence is being deposited on **May 5, 2003** with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to the Assistant Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450


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SEPARATE SHEETS WITH MARKED-UP VERSION OF CLAIMS PER 37

C.F.R. § 1.121 (c)(1)(iii)

1 3. (TWICE AMENDED) A constant-power brushless DC motor,
2 comprising:

3 a stator wound in parallel by phases and polarities
4 and configured of n multi-phases, each of the winding coils
5 of the stator which are not connected with one another is
6 connected to each of n full H-bridges, n full H-bridges are
7 connected to a DC power supply in parallel;

8 a rotor having a predetermined number of polarities,
9 which is required to concentrate magnetic flux on
10 excitation area;

11 a commutation encoder including sensing regions and
12 nonsensing regions, the commutation encoder being
13 externally set to one side of the shaft of the rotor; and

14 two photo sensors set to each phase, the two photo
15 sensors being connected to a half H-bridge of each phase,
16 to switch the half H-bridge on and off, wherein the width
17 of each of the sensing regions of the commutator encoder is
18 determined to allow a phases among n phases to be excited
19 constantly, the corresponding photo sensors recognizing the
20 a phases excited,

21 wherein the stator has narrow slots to remove flux
22 cancel phenomenon between every winding slot and to remove
23 peak current between said excited phase and said inexcited
24 phase, and

25 [The motor as claimed in claim 1,] wherein the number of
26 phases among the n phases, which will be excited, is
27 determined by the distance between the sensing regions, the
28 distance between the sensing regions being determined
29 through the following expression,

30 width of sensing regions
 31 $= (2\pi \times \text{number of phases to be excited}) / (\text{number of}$
 32 $\text{polarities of rotor} \times \text{number of phases of motor}) (^{\circ}),$
 33 the number of sensing regions in the commutation
 34 encoder being determined through the following expression,
 35 number of sensing regions
 36 $= (\text{number of polarities of rotor}) / 2,$
 37 the distance between the photo sensors on a sensor
 38 plate being determined by the following expression,
 39 distance between photo sensors
 40 $= 2\pi / (\text{number of polarities of rotor} \times \text{number of phases}$
 41 $\text{of motor}) (^{\circ}),$
 42 among the n phases, a phases being excited but b
 43 phases not being excited all the time